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Location and the Low-Income Experience

Analyses of Program Dynamics in the Iowa Family Investment Program

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In 1993, the state of Iowa, through waivers, implemented reforms creating the Family Investment Program (FIP), a program similar to the Temporary Assistance for Needy Families (TANF) created under the Personal Responsibility and Work Opportunity Reconciliation Act (PRWORA). The goals of FIP (helping program recipients leave poverty and become self-supporting) parallel the intent of TANF and PRWORA (Holcomb et al. 1998; Iowa Department of Human Services 1996). FIP merged and coordinated several existing programs and tied support for job training, education, child care, and transportation more directly to income transfers. Iowa has had to change FIP very little to meet current federal guidelines. Thus, Iowa provides over seven years of experience under a program with rules and incentives similar to those instituted nationwide in 1996.

The federal changes to welfare policies and programs raise questions about how rural families receiving assistance are faring under work requirements and time limits on cash assistance. Not well understood is whether rural welfare recipients face a more difficult transition from welfare to sustained employment given the challenges facing some rural areas.

This chapter examines the dynamics of welfare participation during the pre-TANF period of Iowa's reform (1993–1995), and specifically how program, demographic, and macroeconomic factors relate to re-

turn to welfare after leaving among program participants. Reasons for returning to welfare are examined over time, with specific attention given to local labor market conditions and to metropolitan and nonmetropolitan locations (various classifications). Iowa received a waiver to enact many of the key provisions of TANF during the period of our study, including provisions to encourage recipients to enter job training and the labor market. We use a unique data set composed of linked state administrative records. These data are ideal for longitudinal analyses (analyses spanning a period of time, rather than a cross section at a point in time) because key variables are available monthly. The data can also track location (including location changes) among the FIP households.

We first provide some background to Iowa's welfare program, review previous research, and discuss the aspects of geographic differences that may influence the FIP experience. Next, we outline the main features of the administrative data and discuss the benefits and drawbacks of using administrative data for research purposes. We then describe the dynamics of FIP participation. We develop a model and examine the distribution of the first exit from cash assistance and incidence of returning to welfare. We conclude by drawing several policy implications from our findings.

BACKGROUND

Throughout the 1990s, rural states enjoyed the benefits of a healthy economy. In Iowa in the latter half of the decade, for example, the statewide unemployment rate remained well below the national rate: 95 of the 99 Iowa counties had unemployment rates below the national rate of 4.1 percent in 1999. Iowa's economic success, however, was not uniform across the state. County-level unemployment rates in Iowa in 1999 ranged from 1.7 percent (Warren County) to 4.5 percent (Butler County); among the seven counties with the highest unemployment rates, all but one was predominantly rural (Iowa Department of Workforce Development 2000). In the more rural counties, manufacturing jobs have absorbed much of the workforce leaving farming. However, since 1993, most of Iowa's population growth has been in

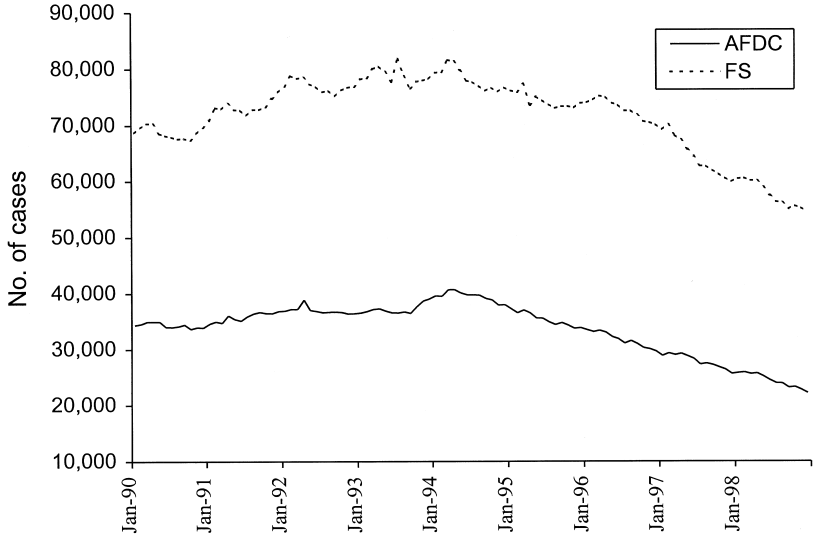
the state's 10 metropolitan counties (Eathington, Swenson, and Otto 2000).

During the 1990s, caseloads for Aid to Families with Dependent Children (AFDC)—later FIP—and the Food Stamp program both peaked around the time of the FIP waiver implementation. Since early 1994, the caseloads for both programs have declined relatively steadily (Figure 6.1). Interestingly, while nonmetro unemployment rates in Iowa remain generally higher than metro rates, both nonmetro and metro counties have seen similar reductions in cash assistance and Food Stamp program participation.

Most studies of former welfare recipients have found that between half and three-quarters of parents are employed shortly after they leave the welfare rolls (Parrott 1998). However, wages are low, typically less than $8.00 per hour and often less than $6.00 per hour. As a result, studies measuring earnings over three-month periods find earnings levels well below poverty.

Much of the policy debate over welfare reform has centered on the plight of poor urban families. Although poverty has become more ur-

Figure 6.1 AFDC/TANF and Food Stamp Caseloads in Iowa, 1990–98



SOURCE: Iowa Department of Human Services.

banized over the past several decades, most poor and welfare recipient families live outside central cities, and many live outside metropolitan areas altogether. Some evidence suggests that rural workers may face substantially greater employment and self-sufficiency barriers than urban workers. In nonmetropolitan areas, poor families are already more likely to be working and more likely to be underemployed (working part-time, earning low wages, or unemployed) than are poor families in metro areas (Findeis and Jensen 1998). In Iowa, average nonfarm earnings in rural counties are below those in metropolitan and other nonmetropolitan counties (i.e., urban nonmetropolitan areas). Nationwide, average rural manufacturing earnings are 68 percent below national levels; in the service sector, rural earnings are 49 percent of the U.S. average (Eathington, Swenson, and Otto 2000).

The majority of the early literature finds that lower participation rates in and higher exit rates from cash assistance programs are associated with greater nonwage income, higher wage rates, more years of schooling, fewer children, good health, and being white. Moreover, these studies also show a "negative duration dependence"; that is, as the time on welfare lengthens, exit rates decline; and the longer a person remains off assistance, the lower the likelihood that they will return.

Moffitt (1992), reviewing the concepts and measures of welfare dependence, found that the most common definition of welfare dependence focuses on the length of a single welfare spell but does not consider the high reentry rates among welfare recipients. Important determinants of returns to welfare include less education, not being married, and having little job experience (Sandefur and Cook 1997; Brandon 1995). Cao's (1996) analyses indicated that initial welfare dependency and return to welfare for those who have left are correlated with the recipient's age, years of education, marital status, ethnic origin, and region.

Born et al. (1998), in preliminary analyses of administrative data from the Maryland Family Investment Program, found that nearly 20 percent of cases were reopened within the first 3–6 months after exit. Reentry rates were lowest among women who left for a job (versus leaving because of marriage, for example). Born and colleagues also found that women whose exits were short-lived tended to have younger

children than those women who managed to remain off the program. Reidy (1998) examined the role of noncash benefits for those leaving AFDC. One result is that those who leave AFDC but continue to claim noncash benefits (including food stamps) are more likely to return to AFDC than others who leave both AFDC and other noncash benefit programs at the same time.

The limited information on differences between rural and urban areas in welfare participation (e.g., Porterfield 1998) shows that those in urban areas have longer spells on welfare than those in rural or smaller urban locations. Different labor market opportunities, household and individual characteristics (including human capital differences) as well as costs of working (i.e., logistics of transportation or child care services) are possible reasons for these differences. The shorter spells on welfare in rural areas may also be due to lack of program information and stigma attached to public assistance (Porterfield 1998). Porterfield also found that rural families (relative to urban) are more likely to enter welfare due to decreases in earnings or income, but urban families are more likely to exit welfare owing to earnings or increases in income.

Metro and nonmetro areas may differ in labor market and job opportunities. Davis, Connolly, and Weber (1999) pointed to the spatial mismatch that has occurred as seekers of jobs in small markets meet with less success and employers in other markets have a difficult time finding the types of employees they need. The greater prevalence of underemployment in nonmetro areas, typified by low-wage employment, involuntary part-time work, or "discouraged" workers, may explain part of the inconsistency between relatively low unemployment rates in many areas and continued low incomes (Findeis and Jensen 1998).

The current study examines the effects and outcomes of an assistance program quite similar to the TANF programs that have been established in many states. The early experiences with FIP in Iowa allow us to examine the experiences of individuals and families who left FIP in the two-year period following its introduction. We study why some low-income households successfully leave public assistance while others who leave return. We examine a specific set of families that were enrolled and active in FIP at the time of the newly enacted changes in the system.

DATA

Iowa was one of the first states to link administrative data across programs to support program administration and policy analysis. In 1995, a project was designed to develop administrative data systems for research purposes. The product of this effort was a three-year longitudinal data file (April 1993–March 1996) that matches and merges FIP, Medicaid, food stamps, child support, and quarterly earnings records for all FIP recipients during this period. FIP, food stamps, and Medicaid represent the key assistance programs for low-income families; child support and earnings are the key sources of nonpublic assistance income. The data include amounts (e.g., program benefits, child support received, and earnings) and dates (e.g., program exit and reentry). Because the data are not subject to problems of respondent recall or respondent bias, administrative data are preferred over survey data in many respects. The data are linked for all residents receiving FIP in April 1993. Observations (cases) are added to the file as they enter FIP; cases are followed throughout the data period, even after exiting FIP.

We supplement the administrative data in two ways. First, we classify each county as metro (counties in metropolitan areas); urban nonmetro (nonmetro counties with at least one urban population of 20,000 or more); small town/rural adjacent (counties with no urban population more than 20,000 and adjacent to a metro area); or small town/rural nonadjacent (counties not adjacent to a metro area). All categories are derived from Butler and Beale (1994). The last three categories can be combined into a nonmetro group. Second, we merge monthly county unemployment rates and county income per capita to account for the effect of local economic conditions in our analyses. Monthly county unemployment rates are available from Iowa Workforce Development.

We create a two-year panel data set, beginning in October 1993 (the start of the FIP program) and ending September 1995. All cases identified as receiving FIP benefits in October 1993 (N = 38,632) are included in the panel. No samples are drawn for these analyses. We count 22,080 FIP exits among the cases, where an exit is defined as being inactive (i.e., no benefits) for two months in a row. After deleting cases with missing information other than educational attainment, the

total is reduced to 32,309 cases. Of these, 17,159 (53 percent) were metro cases and 15,150 (47 percent) were nonmetro cases.

Although the Iowa linked data set includes detailed information on child support collections, FIP participation, and quarterly wage earnings, the household and demographic variables are limited. Available information includes the case head's educational attainment, age, marital status, ethnic origin, gender, disability status, and county of residence. The number of children in the household also is available.

Unfortunately, it is not mandatory to provide educational attainment when applying for FIP, and about half of our observations have missing data on education. Further, the missing data are not randomly distributed throughout the data set. Because deleting nonrandom missing data would lead to biased estimates and a loss of information, we employed a multiple imputation procedure (Rubin 1987) to compensate for the missing educational attainment data. The multiple imputations find that, for the two-year period, there were 6,593 (40.5 percent) cases with no high school degree, 9,436 (57.9 percent) cases with at least a high school degree for two years, and 270 (1.6 percent) cases that experienced a change in education (received a high school degree) some time during the two-year period.

FIP PARTICIPATION

We next examine how the families fared during the initial period of the FIP program and whether there were differences in how the families fared in metro and nonmetro areas. As noted, the data are on cases active in October 1993. Across the two-year period, the overall FIP caseload initially increased and then fell. Some evidence suggests that the initial caseload increase resulted from the more generous FIP income disregards and the stronger support programs that were introduced in 1993 (Fraker et al. 1998).

Table 6.1 provides descriptive information on FIP cases, both total and divided by metro and nonmetro areas. Several economic and program variables are compared between December 1993 (the end of first quarter) and September 1995 (the end of the last quarter). Just over half of the total 32,309 cases were in metro areas. Of the cases, 91 per-

Table 6.1 Selected Demographic Variables for Metro and Nonmetro FIP Cases, Dec. 1993 and Sept. 1995

Variables	Total		Metro cases		Nonmetro cases	
	Dec. 1993	Sept. 1995	Dec. 1993	Sept. 1995	Dec. 1993	Sept. 1995
Quarterly wage income ($)	2,998	3,883	2,781	3,575	3,223	4,207
Share with quarterly wage income (%)	55	69	52	67	58	72
Quarterly child support ($)	164	459	162	435	166	480
Share with quarterly child support (%)	29	36	26	32	32	41
Share of FIP participation (%)	100	50	100	51	100	49
Share receiving food stamps (%)	89	55	90	57	87	53
Number of children	2.20	2.27	2.2	2.31	2.14	2.23
Share living in metro counties (%)	53	53	100	97	0	4
Local unemployment rate (%)	3.74	3.26	3.48	2.97	4.04	3.58
Share with high school degree or above (%)	61	63	58	61	64	66
Share married (%)	20	23	15	18	24	29
Share with female head (%)	91		92		89	
Share white (%)	85		76		94	
Number of observations	32,309	32,309	17,159	17,159	15,150	15,150

NOTE: Tests for the differences between periods show all are statistically significant at the 1% level.

cent of the case heads were female. The nonmetro cases were more likely to have a case head who was married, was white and who had at least a high school degree.

In both metro and nonmetro areas, nearly half of the active FIP cases in October 1993 were active at the end of the two-year period (51 percent for metro and 49 percent for nonmetro areas). Food stamps had similar participation patterns by September 1995 (57 percent of metro cases were active and 53 percent of nonmetro cases), although participation remained slightly higher than the FIP participation. In the first quarter of the observation period (December 1993), 52 percent in metro areas and 58 percent in nonmetro areas were earning wage income. Two years later, nearly two-thirds of the case heads had earnings from wages, with a slightly higher rate (72 percent) reported for nonmetro cases. Among those with wage income, average earnings were higher in nonmetro areas in both periods. This suggests a difference in jobs or a difference in work effort (i.e., more hours worked) by those in nonmetro areas.

The percentage of cases receiving child support also increased during this period; again, a relatively higher share of households in nonmetro areas received child support, and the average amount of child support received was higher in nonmetro areas. In both areas, the percentage with a high school degree increased, as did the percentage who reported being married. In sum, in addition to improvements in the overall economy during the two-year period (as measured by unemployment rates), other indicators also improved.

The FIP population is a relatively mobile one: 11.5 percent moved from their original county of residence at least once during the two-year period (analysis not shown). In metro areas, 7 percent of cases moved to another county; in nonmetro areas, 16.6 percent of cases moved. Of those who moved from the metro area, nearly 22 percent had moved back to the original county at the end of two years, compared with nearly 15 percent of those in nonmetro counties. The evidence suggests that FIP recipients in metro areas are more likely to stay (or return) to their "home" county compared with nonmetro recipients. (Of course, they may move within the county, and the metro areas have more housing and different location options. We were unable to evaluate this possibility. Also, there is greater availability of public housing options in metro areas.)

If labor resources were fully mobile, we would expect that as FIP participants moved to obtain a job, their FIP status would change. Table 6.2 shows the FIP status before and after moving to another county for metro and nonmetro moves during the period. The FIP status during the quarter preceding each move was compared with the FIP status during the first quarter in the new location (each observation is a move). There were 5,068 moves in total, 1,629 with metro as the original county of residence and 3,439 with nonmetro as the originating county. For those originally living in metro counties, moves were evenly distributed between moves to metro and to nonmetro locations. Relatively more active cases stayed active and inactive cases stayed in-

Table 6.2 FIP and Employment Status after Moving to Another County, Oct. 1998–Sept. 1995

	To metro		To nonmetro	
	Active	Inactive	Active	Inactive
Moves from metro (*N*=1,629)				
Active	100	52	116	44
% employed before	66	54	66	61
% employed after move	75	75	69	66
Inactive	72	562	75	608
% employed before	68	48	61	53
% employed after move	75	65	76	69
Total (percent of total)	172 (11)	614 (38)	191 (12)	652 (40)
% employed before	67	49	64	54
% employed after move	75	66	72	69
Moves from nonmetro (*N*=3,439)				
Active	114	68	353	199
% employed before	70	60	62	69
% employed after move	79	69	74	74
Inactive	64	577	224	1,840
% employed before	69	53	67	59
% employed after move	78	71	80	76
Total (percent of total)	178 (5)	645 (19)	577 (17)	2,039 (59)
% employed before	70	54	64	59
% employed after move	79	71	77	76

active, irrespective of the destination county type. For those originally living in nonmetro counties, over three-fourths (17 percent and 60 percent) of cases moved to nonmetro areas. Again, the moves were not associated with big shifts in FIP status.

A relatively large share of moves resulted in employment in the quarter after the move, as shown in Table 6.2. Despite the status in FIP, nearly three-fourths of moves had case heads employed after the move, although the employment rates varied among the different groups shown in the table. Nearly 69 percent of moves from metro counties were employed after the move, compared with 75 percent of moves from nonmetro counties. The highest rates of employment after the move was for moves from nonmetro counties to nonmetro counties. One caveat to these results is that there is some lag in employment reporting in the system.

We next examined the time spent (in months) receiving FIP in each of the two years (1993 and 1995).[1] In metro areas, 15.6 percent of recipients had relatively short spells during the first year (0–6 months on FIP in the first year); 64.3 percent remained on FIP during the full 12 months. The distribution of cases is similar for nonmetro areas, with slightly more (17.1 percent) receiving assistance for 6 months or fewer, and 61 percent remaining on for the full first 12 months.

The extremes in our data are those who do not participate in FIP at all during the second year ("long-term leavers"), and those who participate in FIP all 24 months observed (the "hard-core"). Approximately one-fourth (24.4 percent) of all metro cases and a slightly larger percentage of the nonmetro cases did not participate in FIP at all during the second year. In contrast, 38 percent of metro cases and 35 percent of nonmetro cases remained on FIP all 24 months of the two-year period.

Table 6.3 compares differences in the groups among the four geographic locations between the beginning and the end months of the two-year period. To start, we compare those not participating in FIP in the second year across the four geographic areas. For this group, employment rates (receipt of wage income) were relatively high (ranging from 74 percent to 84 percent) during both years, although in all areas, the percentage with wage income fell between the first and second year. This may be because of increases in marriage rates or child support for this group. The highest rates of employment were in the small towns/rural adjacent areas, areas that have benefited from strong

Table 6.3 Comparison of Selected Demographic Variables for Different Locations and Participation Patterns: Oct. 1993 to Sept. 1995 (October 1993 base year)

	Metro				Urban nonmetro			
	No partic. in 2nd yr. N = 4,183 (24.4%)		Participate all 24 mos. N = 6,541 (38.1%)		No partic. in 2nd yr. N = 1,356 (24.8%)		Participate all 24 mos. N = 2,035 (37.2%)	
Variables	Yr. 1	Yr. 2	Yr. 1	Yr. 2	Yr. 1	Yr. 2	Yr. 1	Yr. 2
Annual wage income ($)	10,478	14,665***	7,671	8,504***	11,317	16,119***	9,148	10,070**
Share employed (%)	79	74***	63	74***	79	78	66	77***
Annual child support ($)	1,323	2,279***	377	394***	1,419	2,381***	372	391**
Share having child support (%)	42	43	38	40***	48	51	42.9	47.7***
Share with food stamps (%)	88	26***	93	92**	88	28%***	93.5	93.8
Number of children	2.04	2.04	2.33	2.44***	2.01	2.01	2.22	2.32**
Share high school or above[a] (%)	61	63*	56	58**	65	67	60	61
Share married (%)	19	20	13.2	13	23	25	21.7	22
Quarters worked	2.50	2.62***	1.85	2.24***	2.53	2.77***	1.95	2.38***
Proportion w/move to another county	0.03		0.03		0.05		0.05	

Table 6.3 (continued)

	Small town/rural adjacent				Small town/rural nonadjacent			
	No partic. in 2nd yr. N = 4,183 (24.4%)		Participate all 24 mos. N = 6,541 (38.1%)		No partic. in 2nd yr. N = 1,356 (24.8%)		Participate all 24 mos. N = 2,035 (37.2%)	
Variables	Yr. 1	Yr. 2	Yr. 1	Yr. 2	Yr. 1	Yr. 2	Yr. 1	Yr. 2
Annual wage income ($)	13,033	17,758***	9,796	11,176***	12,578	17,487***	9,369	10,771***
Share employed (%)	84	81*	69	76***	82	78**	68	75***
Annual child support ($)	1,430	2,462***	389	418**	1,409	2,521***	386	421***
Share having child support (%)	47	49	46	47	54.8	55	47	51**
Share with food stamps (%)	86	30***	86.9	86.6	85	28***	89	88
Number of children	2.07	2.1	2.18	2.27*	2.05	2.04	2.2	2.27
Share high school or above[a] (%)	68	70	62	65*	70	71	66	68
Share married (%)	28	29	24	24	25	26	24	24
Quarters worked	2.79	2.93**	2.12	2.43***	2.69	2.81	2.07	2.39***
Proportion w/move to another county	0.09		0.10		0.10		0.10	

NOTE: *** = significant at the 1% level; ** = significant at the 5% level; * = significant at the 10% level.

[a] The average of five imputation data sets is reported.

growth in jobs and available jobs in metro areas. For those earning wage income, earnings were higher in the second year. The lowest average wage income was reported in metro areas.

Child support receipt also increased in all areas among those not participating in FIP in the second year (Table 6.3). The average rate of growth in annual child support was over 68 percent in all of the areas. Receipt of food stamps decreased, falling from participation levels above 85 percent in the first year to between 26 percent and 30 percent of cases in the second year. Note, however, that even with no FIP participation, up to 30 percent of the cases received food stamp assistance in the second year.

The experience for those on FIP for all 24 months was very different. These cases had lower employment rates, although even during the first year between 63 percent and 69 percent of cases had some wage income. The lowest labor force participation rates were reported in metro areas. Employment rates rose in the second year, with the most rapid increases occurring in metro and urban nonmetro counties. The number of quarters worked also increased for these households. The annual wage income increased; however, the increase was both at a level and rate of increase lower than for those who were not receiving FIP by the second year. Again, the lowest wage income was reported in metro areas.

Rates of child support for the hard core FIP cases increased as well in all areas. The annual levels of child support received were greatest in small town/rural nonadjacent areas. Food stamp assistance was relatively common, and the highest food stamp participation rates occurred in metro counties (with rates of 92–93 percent).

In sum, in all geographic areas, there were changes in labor market activity for FIP households during the two-year period: the average number of quarters worked increased for all groups. Increased work by the hard-core group may be attributed to success in meeting FIP's program goals. In looking across geographic areas, the lower wage income levels and child support in metro areas is striking, especially compared with the two most rural locations. Among those on FIP for the full 24 months, those in metro areas received the lowest wage income and near the lowest levels of child support. Both wages and child support grew relatively more for those in the two most rural areas.

WELFARE EXIT AND RETURN

We next examine return to welfare after leaving by looking at the duration of the first exit spell. We discuss the methods of analysis in the following sections.

Definitions of Variables

We analyze the first exit spell to gain a better understanding of reasons for return to welfare. An exit occurs when a FIP recipient leaves the program for at least two consecutive months. Hence, an exit spell ranges from 2–23 months in our data. We require two consecutive months with no FIP benefits to avoid counting individuals as "exiting" due to administrative delays, or not receiving benefits in the short term because they are, for example, only eligible for less than $10.[2] If the first exit spell lasts only one month, we choose the next valid exit spell.

There are 18,382 exit spells in our sample of 32,309 cases. The distribution of spells for the metro and nonmetro areas are similar. Twenty-five percent of the exit spells are complete before the end of our sample period; the remaining spells are right-censored (that is, we do not observe a return within the two-year period of the data). The average length of all exit spells is 11 months. The average length of the complete spell (one observed to begin and end during the 24 months of data) however, is six months. This result indicates that, for those who returned to FIP, the time they are out of the program is relatively short.

Estimation Procedure

To examine the likelihood of reentry to welfare, we grouped the exit spells into eight mutually exclusive intervals, based on the length of the spell. Each time interval was defined over three months (i.e., 0–3 months, 4–6 months, etc.), and the observation for each interval was whether the case stayed off of FIP or reentered the program. For each time period, we evaluated the likelihood of reentry. (For more detailed description of the estimation procedure, see the appendix.)

This approach allows for the effects of the predictor variables to vary across time intervals, but it requires the effect to be constant with-

in the time interval. The variables that are allowed to vary over time include quarterly potential wage, quarterly child support collections, marital status, number of children, an indicator of the food stamp participation in the previous quarter, an indicator of the area of residence (metro county vs. nonmetro county), and the quarterly local unemployment rate. Time invariant variables are gender and race (white or nonwhite).

Because wage income is an important predictor of FIP participation, and because decisions regarding labor force and FIP participation are jointly determined, we use an instrumental variable approach to control for the endogeneity. The observed wage income in the quarter with highest reported wage income was used in predicting the potential wage income. The instruments for the potential wage include age, education, local unemployment rate, quarter, gender, income per capita of the county of residence, share of county population with a college degree, and an indicator of residing in a metro county.

Empirical Results

Based on the analysis of all cases, as well as of metro and nonmetro cases, we identify several important factors affecting FIP reentry (Table 6.4). First, the effects of some variables are similar across the geographic areas. This includes whether the family received food stamps and the number of children in the household. The effect of other variables differed between the two areas, including the effects of demographics (marital status and gender), local unemployment, and the potential wage. With the data combined, living in a metro county decreases likelihood of return to welfare for those who have exited from cash assistance, although this result is not statistically significant.

For all areas, higher quarterly wage income reduces the likelihood of return to welfare. This result is statistically significant for all cases and for nonmetro. In other words, the chance that a person will return to cash assistance falls as potential earnings increase. Similarly, receiving child support lowers the probability of reentering FIP in a given interval. The magnitude of the estimated effects indicates that child support is more important in remaining off welfare than wage income. Interestingly, a higher (current) unemployment rate does not increase

Table 6.4 Estimated Coefficients of Likelihood to Return to Welfare, Oct. 1993–Sept. 1995

Independent variables[a]	All cases	Metro cases	Nonmetro cases
Potential (predicted) wage	–0.06**	–0.04	–0.07**
Child support	–0.52***	–0.55***	–0.49***
Local unemployment rate	–0.02	0.03	–0.04**
Receipt of food stamps (0,1)	0.61***	0.62**	0.6**
White (0,1)	0.02	0.0003	0.12
Married (0,1)	–0.02	–0.13**	0.06
Male (0,1)	–0.16***	–0.23**	–0.11*
Number of children	0.1***	0.089***	0.1***
Metro location	–0.06		
Number of observations	18,382	9,492	8,890

NOTE: *** = significant at the 1% level; ** = significant at the 5% level; * = significant at the 10% level.

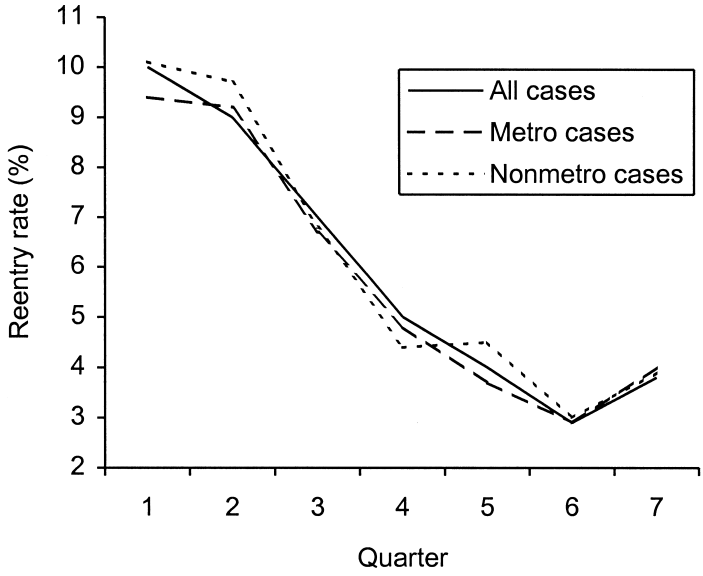
[a] Binary variables for the time periods were also included; all were statistically significant.

the probability of reentry. The estimated effect is statistically significant only for nonmetro areas.

Receiving food stamps in the previous quarter is positively associated with return to FIP. This result is consistent with that found by Reidy (1999) in Illinois. The result suggests that the Food Stamp program provides a safety net for those most at risk of return to FIP. Being married decreases the likelihood of returning to FIP in metro areas; the effect is not statistically significant in nonmetro areas. Cases headed by men are less likely to return to FIP than are those headed by women, and this effect is stronger in metro than in nonmetro areas. Race does not affect the reentry rates. As would be expected, families with more children are more likely to return to welfare.

Figure 6.2 shows the predicted reentry rate over the length of an exit spell. The rate is estimated at the sample means of the explanatory variables. The predicted reentry rate decreases as the exit spell lengthens, supporting other studies that show a negative relationship between

Figure 6.2 Predicted Likelihood of Reentry by County of Residence



the reentry rate and length of the time off of assistance. In the first quarter, the probability of return is 9.3 percent in metro areas and 10.1 percent in nonmetro areas. By the end of the sixth quarter, the likelihood decreases to 2.9 percent for metro areas and 3 percent in nonmetro cases. The probability of return falls throughout the spell (except the last quarter). Although the rates differ in the first quarters, when metro cases are less likely to return than those in nonmetro areas, for longer spells, the chance of return is very similar.

DISCUSSION

We examined the dynamics of welfare participation and the initial experience of welfare reforms in Iowa. More than 60 percent of the FIP recipients we followed in this study left the program at some point during the two-year period. Although improvements in the Iowa econ-

omy account for a share of the exits, our results provide some evidence that Iowa's reform of its welfare program may have helped reduce the FIP caseloads as well. Differences were also evident between metro and nonmetro areas.

The analysis shows that between the first and last quarters in the study period, some of the households saw marked economic improvements. Higher earnings were found for many in nonmetro areas. Food assistance programs continued to offer assistance to the households and seemed especially important during periods of transition. However, many of those receiving support from the Food Stamp program returned to FIP. There was a relatively high degree of mobility among FIP participants, especially for those in nonmetro areas. The moves were not primarily associated with a concurrent departure from FIP.

What is most apparent, though, is that although some households are able to leave FIP, others experience greater difficulties in achieving self-sufficiency. Thirty-seven percent of FIP cases in our data remained on FIP for the full two years. Several indicators suggest that those in metro areas in Iowa were more dependent on FIP; they were less likely to earn wages or collect child support, and they received lower wages and less child support. Under TANF, the five-year lifetime limit on receiving benefits may affect this group most directly. They may be without assistance if state governments can exempt only 20 percent of their caseloads from the time limit, as the federal law requires.

Looking at the return to welfare by those who left FIP, the data suggest that FIP recipients who returned to the program did so quickly (the average time off welfare is six months). Among FIP recipients, those in metro areas are less likely to leave FIP compared with those in nonmetro areas, but once they leave, metro recipients are less likely to return right away. The multivariate analysis of likelihood of return to FIP shows that, after the first two quarters, there is little difference in the likelihood of returning between metro and nonmetro locations.

The reasons for the differences (and similarities) are likely to be complex, and we are only beginning to understand the experience of those who leave FIP (and food stamps) through closer examination of administrative and survey data. Characteristics of the "leavers," as they are called, may differ across geographic areas. Perhaps metro recipients do not leave FIP until they have very good economic pros-

pects. Once they have left, they remain off FIP longer and are less likely to return immediately. There may also be differences in nonparticipation among those eligible for FIP; administrative data can provide only very limited evidence of this.

The lessons learned here provide a preliminary indication of what we can expect from a state TANF program. Iowa's experience suggests that human capital, marriage, child support, and the number of children are major determinants of welfare dependence. Food assistance programs provide significant support to those most at economic risk. Programs and policies designed to enhance education, encourage marriage, provide and impose job training and job search, and further enforce child support are likely to be most effective in helping families achieve economic self-sufficiency, in both metro or nonmetro areas.

The empirical analyses for this study were conducted using state administrative data. Having the opportunity to use administrative data for research is a mixed blessing. These data allowed for analyses that could not have been conducted with survey data. On the other hand, they have their own challenges and limitations relative to survey data that cannot be ignored. We addressed one of these challenges—the problem of missing data for a key explanatory variable (educational attainment)—in detail in another study (Keng, Garasky, and Jensen 2000). Here, we took advantage of the ability to track location change and the dynamics of active program participation. Research based on administrative data complements traditional survey-based research.

Notes

1. Note that our data are left censored. That is, we do not have information about the case and case members prior to April 1993. Further, for these analyses, we do not make use of information prior to the start of the FIP program, October 1993.
2. Program rules are such that an FIP program participant eligible for a cash benefit of less than $10 in a given month does not receive a cash benefit that month, but continues to remain eligible for, and must participate in, all other aspects of the program as if she or he had received a cash benefit.

APPENDIX

ESTIMATION PROCEDURE

A semiparametric proportional hazard model with time-varying covariates is applied to our grouped duration data (Prentice and Gloeckler 1978; Kiefer 1990). The advantage of the semiparametric method is that the baseline hazard is nonparametric and is estimated along with the coefficients of the explanatory variables using a maximum likelihood procedure. We grouped the exit spells by duration into eight mutually exclusive time intervals: that is, reentry occurs in one of the following intervals [0, 4), [4, 7), . . . , [22, ∞), where a month is the unit of the measurement. The exit intervals are defined as $[0, a_1), [a_1, a_2), \ldots, [a_i, \infty)$. The probability of an exit spell ending in interval i is equivalent to the probability that a spell survives to interval $i - 1$ and fails in interval i. Hence, the probability is given by

$$\textbf{(1)} \quad \text{Prob}(a_{i-1} \leq \text{T} < a_i) = (1 - \text{P}_{a_i}) \prod_{j=1}^{i-1} \text{P}_j,$$

where $j = 1, \ldots, 7$.

We treat survival or failure (reentry) in each time interval as an observation. As a result, each FIP case contributes i observations to the likelihood function where i is the interval in which reentry takes place. For exit spells censored in a given interval, we assume that censoring occurs at the beginning of the interval. Given a sample with N individuals, where $k = 1, \ldots, N$, the likelihood function is given as

$$\textbf{(2)} \quad L(\theta) = \prod_{k=1}^{N} (1 - \text{P}_{a_{ik}})^d \prod_{j=1}^{i-1} \text{P}_{a_{jk}},$$

where $d = 0$ if the individual is still at risk and $d = 1$ if reentry occurs.

To estimate the likelihood function, we use a proportional hazard function $\lambda(t,\text{X}_t) = \lambda_0(t)\phi(\beta,\text{X}_t)$, where $\lambda_0(t)$ is the baseline hazard function, $\phi(\beta,\text{X}_t) = \exp(\beta'\text{X}_t)$, β is a vector of coefficients, and X_t is a set of regressors. Instead of specifying the functional form for the baseline hazard, the semiparametric method estimates the baseline hazard function for each time interval. The resulting log likelihood function can be rewritten as follows:

$$\textbf{(3)} \quad \log L^*(\theta) = \sum_{k=1}^{N} \{1 - \exp[-\exp(r_{ik} + \beta'\text{X}_{tk})]\} - \sum_{k=1}^{N} \sum_{j=1}^{i-1} \exp(r_{jk} + \beta'\text{X}_{jk}),$$

where $\theta = (r_1, r_2, \ldots, r_m, \beta)$

(4) $r_{ik} = \log[-\log\delta_i]$

$$\delta_i = \exp\left[-\int_{i-1}^{i} \lambda_0(s)\mathrm{d}s\right].$$

δ_i is the conditional survival probability in interval i when $\beta'X_i$ is equal to zero.

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